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Classroom anxiety and enjoyment in CLIL and non-CLIL: Does the target language matter?

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Abstract

This study investigates pupils' anxiety and enjoyment in the classroom when learning a second or foreign language. The particularity of this study lies in the comparison of two target languages (English and Dutch) in two educational contexts (CLIL and non-CLIL) at different instruction levels (primary and secondary education). While most research on content and language integrated learning (CLIL) focuses on English as a target language, the Belgian context calls for a comparison with the language of the "other" community, in this case Dutch.

Data were collected from 896 pupils in French-speaking Belgium through a self-report questionnaire measuring pupils' anxiety and enjoyment in the classroom, along with background characteristics. Results indicate that while CLIL pupils experience significantly less anxiety than their non-CLIL counterparts, English learners report significantly less anxiety and more enjoyment than Dutch learners. This suggests an important role of the target language for emotional engagement in the classroom and calls for further investigation into the role of target language perceptions. Finally, the interactions with instruction level reveal that while primary school pupils report stronger emotions, the effects of CLIL and English are much larger at secondary level.

Keywords: anxiety; enjoyment; CLIL; English; Dutch

1. Introduction

In an era of growing internationalization and multilingualism, content and language integrated learning (CLIL) provides an interesting alternative to traditional language education. This specific didactic approach increases the amount of input and authentic situations in the target language by organizing a part of the curriculum in this language (other than the mainstream school language). Research indicates that this approach has a beneficial effect on pupils' target language proficiency (Admiraal, Westhoff, & de Bot, 2006; Lasagabaster, 2008; Lorenzo, Casal, & Moore, 2010). Furthermore, CLIL is also believed to have a positive impact on socio-affective variables such as language attitudes, motivation and anxiety (Lasagabaster, 2009). However, while the last decade has witnessed a growing interest in the role of both positive and negative emotions in language learning (Dewaele, 2005a, 2015; MacIntyre & Gregersen, 2012, 2016; Oxford, 2015; Ross & Stracke, 2016), few large-scale and/or longitudinal studies have investigated those aspects in CLIL so far. Therefore, the present study, as part of a larger multidisciplinary and longitudinal research project assessing CLIL in French-speaking Belgium, aims to address this gap in the literature by investigating anxiety and enjoyment in CLIL and non-CLIL. Considering the specific multilingual context of Belgium, this study looks into both English and Dutch as target languages.

2. Theoretical and contextual framework

2.1. Emotions in language learning

Surprisingly, while affective factors have been largely studied in second and foreign language (FL) acquisition research (Dörnyei, 2003; Gardner, 1985; Gardner

& Lambert, 1959, 1972; Gardner & MacIntyre, 1993a, 1993b), the literature on the role of emotions in language learning is still relatively scarce. A partial explanation lies in the fact that "the word 'emotion' itself was generally absent in the SLA literature up to the start of the current century, although there had been interest in one specific emotion: foreign language anxiety," as pointed out by Dewaele (2015, p. 13). Launched by the seminal work of Horwitz, Horwitz and Cope (1986) and the scale they developed, foreign language classroom anxiety (FLCA) has been extensively studied in SLA research and has been identified to have a debilitating effect on L2 learning and achievement (Aida, 1994; Dewaele & Al-Saraj, 2015; Pérez-Paredes & Martinez-Sanchez, 2000; Thompson & Sylvén, 2015). However, until recently, few other emotions have been looked into regarding their possible impact on language learning. With the emergence of positive psychology at the beginning of this century, positive emotions came into the picture and launched an additional line of research (Gregersen, MacIntyre, Finegan, Talbot, & Claman, 2014; Gregersen, MacIntyre, & Mercer, 2016; MacIntyre, 2016; MacIntyre & Mercer, 2014; Seligman & Csikszentmihalyi, 2000). As indicated by MacIntyre and Gregersen (2012), positive emotions have the potential to act as facilitators in the language learning process.

In order to compare the effects of positive and negative emotions on language learners, Dewaele and MacIntyre (2014) developed a foreign language enjoyment (FLE) scale and combined it with a reduced version of the FLCA scale. Overall, language learners' enjoyment levels appeared to be significantly higher than their anxiety levels. The results also showed a moderate negative correlation between FL anxiety and enjoyment, "suggesting that they are partially interrelated, but essentially separate dimensions" (Dewaele, Witney, Saito, & Dewaele, 2017, p. 3). Therefore, Dewaele et al. (2017) conclude it is crucial to investigate anxiety and enjoyment simultaneously when it comes to language learning in the classroom.

2.2. Content and language integrated learning (CLIL)

The setting of our study is the alternative educational approach known as content and language integrated learning (CLIL), in which "a second language (a foreign, regional or minority language and/or another official state language) is used to teach certain subjects in the curriculum other than language lessons themselves" (Eurydice, 2006, p. 8). Crucial to this approach is the dual focus on content and language. Both aspects are equally important and are to be integrated into each other. This is conceptualized by the 4Cs framework, integrating content, communication, cognition and culture, as well as by the language triptych, connecting three types of language intervening in CLIL: language *of* learning, language *for* learning and language *through* learning (Coyle, Hood, & Marsh,

2010). This approach is promoted by the European Commission in order to reach the Commission's general objective of proficiency in three Community languages for each citizen at the end of secondary education (European Commission, 1995).

Besides the main linguistic and educational goals, CLIL is also presented as pursuing socio-economic and socio-cultural aims (Eurydice, 2006). Moreover, the specific teaching/learning context of CLIL is believed to have a positive impact on socio-affective variables as it may enhance motivation, improve language attitudes, foster multicultural openness and reduce anxiety (Lasagabaster, 2009). CLIL is even characterized as "a relatively anxiety-free environment" by Muñoz (2002, p. 36). According to Thompson and Sylvén (2015), the theoretical underpinning for lower anxiety in CLIL lies in the focus on communicating content rather than on language form, which is what Maillat (2010) calls "the mask effect."

When it comes to research on CLIL, the vast majority of the existing literature focuses on the linguistic aspects of the approach, indicating higher target language proficiency for CLIL learners. However, few extensive studies have looked at the role of socio-affective variables in CLIL. As for emotions, while anxiety has been considerably studied in SLA research, enjoyment has only recently been applied to the context of language learning by Dewaele and MacIntyre (2014, 2016), and both emotional dimensions are still fairly absent from CLIL research, especially in primary education. The rare studies that do look into emotions in CLIL tend to focus on negative rather than on positive emotions.

Recently, Doiz, Lasagabaster and Sierra (2014) compared pupils in CLIL and non-CLIL in Grades 7 and 9 in the Basque Autonomous Community in Spain. Controlling for parental education and age, CLIL pupils appeared to be more motivated than non-CLIL pupils, but they also experienced significantly more anxiety than non-CLIL pupils in Grade 7. The authors suggest that the more demanding CLIL approach might cause higher anxiety for CLIL pupils in Grade 7 compared to non-CLIL pupils. However, no significant differences in anxiety were found in Grade 9, leading the authors to conclude that as CLIL pupils gradually become more accustomed to using English in their content classes, they also become less anxious. However, to us, another possibility seems that being selected for CLIL by the school (only the case in Grade 7) causes higher anxiety.

In their subsequent study, Lasagabaster and Doiz (2017) followed the two age groups for respectively three and two years (from Grade 7 to Grade 9 and from Grade 9 to Grade 10). Within the non-CLIL group, results showed little significant variation over time, except for the younger non-CLIL pupils displaying significantly more anxiety in English in Grade 9 compared to Grade 7. The means indicate that anxiety levels of non-CLIL pupils were particularly low in Grade 7 and visibly higher as they progressed into Grades 8 and 9. Within the CLIL-group, the older pupils reported more anxiety when speaking English in Grade 10 than in Grade

9, along with significantly more interest in the English culture. While this seems to contradict the results of the previous study, the authors suggest these changes might be related to the age factor. However, they do not specify in what way.

In Sweden, a study by Thompson and Sylvén (2015) revealed significant differences in anxiety profiles between CLIL and non-CLIL pupils in the first semester of high school (Grade 10). Compared to non-CLIL pupils, pupils in the CLIL-track reported significantly less English class performance anxiety as well as higher self-confidence, more affinity toward English classes, a more relaxed attitude towards English, higher confidence with native speakers and less fear of ambiguity in English. Strikingly, these significant differences were found at the very beginning of high school, when pupils first started with CLIL in this case. Therefore, the authors suggest these differences between groups cannot be the effect of CLIL, but rather the effect of voluntary selection, where pupils with more favorable profiles, such as lower anxiety, opt for CLIL.

Finally, Möller (2016) investigated different forms of anxiety in CLIL and non-CLIL in secondary education in Germany, controlling for the approach implemented in primary education. In terms of exam anxiety, no significant differences appeared between pupils in CLIL and in non-CLIL. However, the results indicated that pupils who had participated in immersive-reflective lessons (IRL) in primary school (i.e., English as a FL at primary level) experienced significantly less inhibiting exam anxiety in their later school career than pupils who had not participated in IRL. As to fear of success (i.e., the belief that success will lead to negative consequences such as jealousy or bullying), the reverse scenario applied. While no significant differences appeared as a function of participation in IRL, pupils in CLIL reported significantly more fear of success than pupils in non-CLIL. The author points to the selectivity of the CLIL system in German secondary education as a likely cause or enhancer of this negative emotion.

Regarding positive emotions in CLIL, an exploratory case study conducted by Hunt (2011) in England showed that pupils in secondary education are positive about CLIL (in French, Spanish or German) and enjoy the lessons, which they experience as being fun, refreshing and challenging. According to the author, the positive reactions of the pupils might be linked to teachers' efforts to make lessons accessible and the greater care taken in CLIL to help pupils overcome the hurdles.

This overview of the scant literature on emotions in CLIL shows inconclusive results as to differences in anxiety between CLIL and non-CLIL. Nevertheless, it identifies a number of factors impacting anxiety in CLIL, such as age (inconsistent tendencies) and voluntary selection in CLIL (more favorable profiles in terms of anxiety). Regarding enjoyment, while it has hardly been studied in CLIL, Hunt's (2011) results suggest a positive influence of the pedagogy and the engagement dispensed by teachers in CLIL. Furthermore, this overview illustrates

the tendency of the existing literature to focus on CLIL in English in secondary education and to neglect CLIL in other languages (except for CLIL in English-speaking areas such as Canada and England) and/or at other instruction levels, particularly in primary education.

2.3. The language learning context in Belgium

In the specific context of Belgium, with four official linguistic regions (Dutch-speaking Flanders, French-speaking Wallonia, bilingual Brussels and German-speaking East cantons), bi- or multilingualism is not only a socio-cultural but also a socio-economic asset. However, while bilinguals (Dutch-French) and multilinguals (Dutch-French-English) are much needed on the job market (Mettewie & Van Mensel, 2009), traditional FL classes in mainstream (monolingual) education in Belgium fail to deliver satisfying results in terms of language skills (Ginsburgh & Weber, 2007; Janssens, 2008). Research pointed out the important role of socio-affective variables in this matter. It appears that attitudes towards the other main language in Belgium (French for Dutch-speakers and Dutch for French-speakers) are not so positive, especially in comparison to attitudes towards English (Housen, Janssens, & Pierrard, 2002; Lochtman, Lutjeharms, & Kermarrec, 2005). Moreover, these rather negative attitudes towards the L2 and/or the L2 community were found to be related to poor achievement in the L2 (Dewaele, 2005b; Mettewie, 2004). Mettewie (2015) suggests that the ambient context of conflict between the Dutch- and French-speaking communities, fueled by the media, might lie at the basis of these negative attitudes and as such hinders the acquisition process of the L2.

The above depicts a particularly paradoxical situation: While language skills are much needed and therefore considered an asset, L2 competence is generally very limited, partly due to negative attitudes towards the L2 and the L2 community within the tense socio-political situation of Belgium. In this context, CLIL appears to be an interesting alternative to traditional language education as the approach seems to result in higher target language proficiency (Admiraal et al., 2006; Lasagabaster, 2008; Lorenzo et al., 2010) as well as in improved attitudes towards the L2 and its community (Mettewie & Lorette, 2014). As such, CLIL could enhance socio-cultural openness and tolerance towards the other main language community (French-speaking vs. Dutch-speaking; Eurydice, 2006). Hence, this socio-cultural dimension of CLIL raises the question as to the role of emotions and the possible impact of CLIL on emotions. However, emotions such as FL classroom anxiety and enjoyment have not yet been investigated in the context of Belgium, let alone in CLIL in Belgium.

2.4. Research questions and hypotheses

Given the dearth of research on emotions in CLIL and the tendency of the existing literature to focus on CLIL in English at secondary level, the present contribution aims to investigate positive and negative emotions in CLIL on a larger scale. The main research objective is to examine how these emotions vary across different settings. Our research question is thus threefold: *How do FL classroom anxiety and enjoyment vary and interact as a function of*:

1. The educational approach (CLIL/non-CLIL)?
2. The target language (English/Dutch)?
3. The level of instruction (primary/secondary education)?

Based on the literature review, we formulate the following hypotheses:

H1: Considering the theoretical basis for lower anxiety in CLIL ("focus on meaning"), as pointed out by Thompson and Sylvén (2015), we hypothesize more favorable emotions (less anxiety and more enjoyment) in CLIL compared to non-CLIL.

H2: Considering the far more positive attitudes towards English compared to Dutch (Housen et al., 2002; Lochtman et al., 2005), as well as the tensions between the Dutch- and French-speaking communities (Mettewie, 2015), we hypothesize more favorable emotions (more enjoyment and less anxiety) in English than in Dutch.

H3: In the absence of extensive research comparing pupils' emotions in primary and secondary education, we cannot formulate firm hypotheses as to possible differences between those instruction levels. However, considering the tendency for pupils' motivation and involvement to gradually decrease over the course of language learning and education (Chambers, 1999; Davies & Brember, 2001; Fernández Fontecha & Terrazas Gallego, 2012; Littlejohn, 2008; Williams, Burden, & Lanvers, 2002), partly due to the differences in instruction organization between primary and secondary education (Feldlaufer, Midgley, & Eccles, 1988; Wigfield, Eccles, & Rodriguez, 1998), we can expect a similar pattern with regard to emotions. We therefore hypothesize more favorable emotions (more enjoyment and less anxiety) in primary compared to secondary education.

3. Method

This study is part of a larger multidisciplinary and longitudinal research project entitled *Assessing Content and Language Integrated Learning (CLIL): Linguistic,*

Cognitive and Educational Perspectives conducted at the Université catholique de Louvain and the Université de Namur in French-speaking Belgium between 2014 and 2019 (Hiligsmann et al., 2017). The present contribution addresses some of the socio-affective research objectives of the project as it investigates emotional engagement in the classroom with respect to anxiety and enjoyment.

3.1. Participants

The participants for this study are 896 pupils from 13 primary and 9 secondary schools in French-speaking Belgium. The participating schools were selected in order to obtain diversity in terms of location (all provinces are covered), socio-economic level, CLIL type (early or late) and organizing authority. At the time of the data collection, the pupils were in the fifth year of either primary (Grade 5) or secondary (Grade 11) French-medium education, learning Dutch or English as a second or foreign language through either CLIL or non-CLIL. Tables 1 and 2 display the distribution of the participants across the different subsamples as well as the background characteristics per subsample.

Table 1 Distribution of participants across subsamples (*N* = 896)

	CLIL		Non-CLIL		Total
	Dutch	English	Dutch	English	
Primary	174	102	68	97	441
Secondary	140	100	113	102	455
Total	314	202	181	199	896

Table 2 Background characteristics per subsample

				Gender (%)		Bilingualism (%)			SES (%)			School failure (%)	IQ (*M*)
			N	Female	Male	French	French + other	Mostly other	Low	Medium	High		
Primary	English	Non-CLIL	97	52.6	47.4	58.3	30.2	11.5	53.5	26.8	19.7	26.6	25.95
		CLIL	102	41.2	58.8	53.9	38.2	7.8	22.6	38.1	39.3	6.9	29.34
	Dutch	Non-CLIL	68	51.5	48.5	44.1	42.6	13.2	45.8	32.2	22.0	16.7	28.63
		CLIL	174	57.5	42.5	66.1	29.9	4.0	14.3	5.1	50.6	2.9	30.25
Secondary	English	Non-CLIL	102	59.8	40.2	67.6	26.5	5.9	36.4	44.2	19.5	24.8	41.82
		CLIL	100	55.0	45.0	64.0	25.0	11.0	19.8	44.4	19.5	20.0	43.67
	Dutch	Non-CLIL	113	56.6	43.4	69.9	26.5	3.5	28.4	38.2	33.3	25.9	42.41
		CLIL	140	45.0	55.0	80.7	15.7	3.6	10.1	31.8	58.1	9.3	46.04
Total			896	52.6	47.4	64.9	28.3	6.8	25.4	36.2	38.4	15.2	36.94

Note. SES = socio-economic status.

Regarding the characteristics of these participants, 471 of them are female and 425 are male. As to bilingualism, in terms of languages spoken outside school, the majority of the participants (64.9%) speak French all the time, 28.3%

speak both French and another language (not specified in the questionnaire), while 6.8% speak a language other than French most of the time. The socio-economic status of the participants was measured by the highest degree of the mother. This resulted in three categories, from high to low: long-type higher education (38.4%), short-type higher education (36.2%) and secondary degree or lower (25.4%). Comparison between groups revealed that the socio-economic status is significantly higher in CLIL than in non-CLIL, higher for pupils learning Dutch rather than English and higher in secondary education compared to primary education (UNIANOVA, all *p* values lower than .05). Considering these significant differences between groups, it is crucial to include socio-economic status as a control variable in further analyses. With respect to school trajectories, 15.2% of the participants reported having failed at least one year in their curriculum. Comparison between groups indicated that there is significantly more school failure in non-CLIL than in CLIL, in secondary school than in primary school and amongst pupils who are learning English rather than Dutch (UNIANOVA, all *p* values lower than .05). Finally, in terms of nonverbal intelligence, measured by Raven's Standard Progressive Matrices (Raven, Court, & Raven, 1998), the means of the participants are in accordance with the norms for their respective ages. Besides the expected significant difference between secondary education and primary education, the analyses also revealed significantly higher nonverbal IQ-scores in CLIL compared to non-CLIL and for pupils learning Dutch rather than English (UNIANOVA, all *p* values lower than .01). Once more, the presence of significant differences between groups highlights the importance of controlling for these variables in further analyses.

3.2. Instrument and procedure

The data used for this study were collected through an extensive self-report questionnaire measuring, among other socio-affective variables, pupils' anxiety and enjoyment in the classroom, along with background information such as socio-demographic variables, school trajectories and linguistic background. Inspiration for the scales measuring emotions was found in the *Foreign Language Classroom Anxiety Scale* (Horwitz et al., 1986) and the *Foreign Language Enjoyment Scale* (Dewaele & MacIntyre, 2014). However, both scales were reduced, adapted and translated in order to fit the specific context and needs of the study. A pilot study revealed that CLIL pupils do not distinguish between regular language classes and subject classes taught through the target language when it comes to classroom anxiety and enjoyment. Therefore, some items from the pilot study were deleted and others adapted to keep only one version for CLIL and non-CLIL pupils, targeting both language and subject classes in the case of

CLIL pupils. This resulted in one 9-item scale measuring FL anxiety and one 5-item scale measuring FL enjoyment in the classroom. Both were measured through 7-point Likert scales, the anxiety scale ranging from *strongly disagree* (1) to *strongly agree* (7), and the enjoyment scale ranging from *never* (1) to *always* (7). Exploratory factor analysis supported the distribution of the selected items into their respective scales. Both scales also showed satisfactory internal consistency with α = .838 for anxiety and α = .778 for enjoyment (see Appendices A and B for the lists of items of both scales). There were two slightly different versions of the questionnaire as items were adapted to pupils' (first) target language (English or Dutch). All items were however formulated in French (see Appendix A), the main language of education and most pupils' first language. The questionnaire was completed during school hours in pen-and-paper format. The data were digitalized after completion through optical reading.

3.3. Data analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS) 24. Considering we did not use existing, validated scales for this study, as explained in the previous section, we first conducted exploratory factor analyses and reliability analyses in order to validate the construction of our scales and their respective internal consistency. The preliminary exploratory analyses were completed by descriptive statistics and correlations. Finally, in order to answer the research questions, a multivariate analysis of covariance (MANCOVA 2x2x2) was conducted. In this analysis, the two dependent variables are the computed factors of anxiety and enjoyment. The different grouping variables were inserted as three fixed factors, namely educational approach (non-CLIL/CLIL), target language (English/Dutch) and instruction level (primary/secondary). The background variables of gender, bilingualism, socio-economic status (SES), school failure and nonverbal intelligence (IQ) were added as five covariates. Post hoc tests were conducted using Bonferroni's correction to compare the main effects of the significant interactions.

4. Results

The results of the descriptive analyses are summarized in Table 3. Overall, FL anxiety in the classroom is relatively low as it remains under the neutral point of 4 with a general mean of 3.58 on a scale ranging from 1 to 7. The means are lower in secondary education compared to primary education, lower in CLIL compared to non-CLIL and lower in English than in Dutch. On the other hand, enjoyment in the FL classroom is relatively high overall, with a general mean of 4.92. The means are higher in primary education compared to secondary education,

higher for English than for Dutch and higher in CLIL than in non-CLIL except for Dutch in primary school. For both enjoyment and anxiety, analyses of variance will point out whether these observations are significant or not. Regarding the relationship between the two emotions, the correlational analysis revealed a significant negative correlation of -.330 ($p < .001$) between FL anxiety and enjoyment in the classroom.

Table 3 Descriptive analyses for anxiety and enjoyment

			N	Anxiety		Enjoyment	
				M	*SD*	*M*	*SD*
Primary	English	Non-CLIL	97	4.06	1.38	5.40	1.23
		CLIL	102	3.66	1.32	5.58	0.88
	Dutch	Non-CLIL	68	4.13	1.17	5.18	1.07
		CLIL	174	3.74	1.19	5.09	1.20
Secondary	English	Non-CLIL	102	3.37	1.29	4.88	1.03
		CLIL	100	2.77	0.09	5.26	0.82
	Dutch	Non-CLIL	113	3.77	1.33	3.98	0.96
		CLIL	140	3.26	1.12	4.33	0.90
Total			896	3.58	1.27	4.92	1.15

The MANCOVA showed significant effects for three of the five covariates: gender (Hotelling's trace = 0.02, $F(2, 668^{1}) = 6.58$, $p < .01$, $\eta^2_p = .019$), socioeconomic status (Hotelling's trace = 0.02, $F(2, 668) = 6.37$, $p < .01$, $\eta^2_p = .019$) and bilingualism (Hotelling's trace = 0.02, $F(2, 668) = 5.91$, $p < .01$, $\eta^2_p = .017$), while no significant effects were found for non-verbal intelligence and school failure. Over and above these background effects, the analysis revealed significant main effects for the three grouping variables of instruction level (Hotelling's trace = 0.14, $F(2, 668) = 47.42$, $p < .001$, $\eta^2_p = .124$), target language (Hotelling's trace = 0.10, $F(2, 668) = 33.05$, $p < .001$, $\eta^2_p = .090$), and educational approach (Hotelling's trace = 0.03, $F(2, 668) = 9.10$, $p < .001$, $\eta^2_p = .027$). These main effects are qualified by two significant two-way interactions, one between instruction level and target language (Hotelling's trace = 0.02, $F(2, 668) = 7.28$, $p < .01$, $\eta^2_p = .021$), and the other between instruction level and educational approach (Hotelling's trace = 0.01, $F(2, 668) = 3.38$, $p < .05$, $\eta^2_p = .010$). For a better understanding of these different effects, the follow-up univariate analyses will be discussed separately for anxiety and enjoyment in the following subsections.

[1] While the overall sample counts 896 participants, the multivariate analysis was conducted with 682 participants due to approximately 15% of missing values for SES (collected through a questionnaire for parents) and approximately 11% of missing values for nonverbal IQ (collected on computers at the university), of which approximately 2% of missing values overlapped, for a total of 24% missing values. Results of analyses performed without covariates on the total sample provide results similar to those presented in Tables 4 and 5.

4.1. Anxiety

At the univariate level, the analysis for FL anxiety in the classroom revealed significant effects of gender (lower anxiety among boys than girls), SES (lower anxiety among pupils with higher SES) and bilingualism (lower anxiety among bilinguals compared to monolinguals). Beyond these background effects, significant main effects of educational approach, instruction level and target language were observed, as well as a significant two-way interaction between instruction level and target language. As illustrated in Figure 1, the main effects indicate that pupils experience less FL anxiety in the classroom in CLIL than in non-CLIL, in secondary education than in primary education and when learning English rather than Dutch. The statistical details can be found in Table 4.

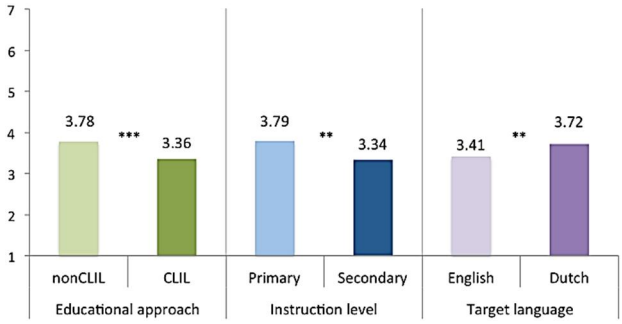

Figure 1 Comparisons of means between groups for anxiety (** $p < .01$, *** $p < .001$)

Table 4 Univariate analysis of covariance for anxiety

Source	Type III sum of squares	*df*	Mean square	*F*	*p*	Partial eta squared
Corrected model	154.756*	12	12.896	9.619	0.000	0.147
Intercept	386.508	1	386.508	288.277	0.000	0.301
Gender	15.132	1	15.132	11.286	0.001	0.017
Socio-economic status	14.519	1	14.519	10.829	0.001	0.016
Bilingualism	9.485	1	9.485	7.075	0.008	0.010
School failure	0.329	1	0.329	0.245	0.620	0.000
Non-verbal intelligence	2.368	1	2.368	1.766	0.184	0.003
Level (primary/secondary)	16.188	1	16.188	12.074	0.001	0.018
Target language (English/Dutch)	14.041	1	14.041	10.473	0.001	0.015
Approach (non-CLIL/CLIL)	24.211	1	24.211	18.058	0.000	0.026
Level x target language	6.661	1	6.661	4.968	0.026	0.007
Level x approach	0.828	1	0.828	0.618	0.432	0.001
Target language x approach	1.130	1	1.130	0.843	0.359	0.001
Level x language x approach	1.084	1	1.084	0.809	0.369	0.001
Error	895.623	668	1.341			
Total	9542.630	681				
Corrected total	1050.379	680				

Note. * $R^2 = .147$ (adjusted $R^2 = .132$)

Post hoc tests on the interaction between instruction level and target language (see Figure 2) indicate that pupils learning English in secondary education experience significantly less FL anxiety in the classroom than the other groups. None of the other groups differ significantly from each other. There is thus no significant difference in FL classroom anxiety between pupils in primary school whether they are learning English or Dutch, nor between pupils learning Dutch whether in primary or secondary school, nor between pupils learning English in primary school and pupils learning Dutch in secondary school.

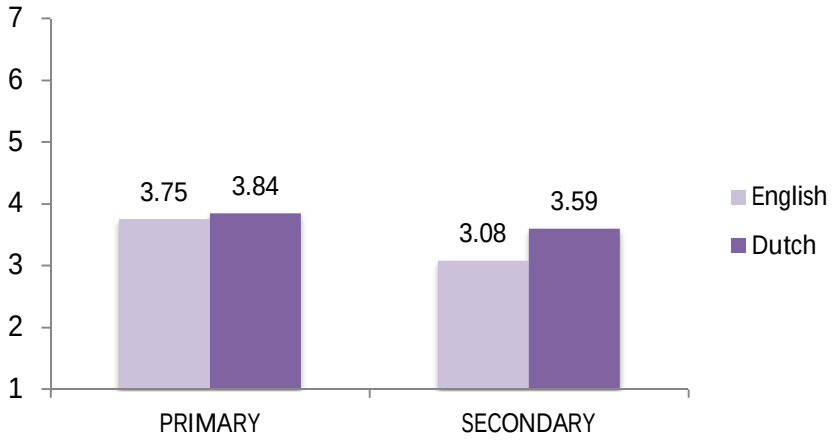

Figure 2 Effect of the interaction between instruction level and target language on anxiety

4.2. Enjoyment

At the univariate level, the analysis for enjoyment revealed a significant effect of bilingualism, with higher enjoyment amongst bilinguals compared to monolinguals. Beyond this background effect, significant main effects of the grouping variables target language and instruction level were observed, as well as two significant two-way interactions between instruction level and target language and between instruction level and educational approach. As illustrated in Figure 3, the main effects indicate that pupils experience more enjoyment in the classroom in primary education than in secondary education and more when learning English rather than Dutch. However, the difference in enjoyment between pupils in CLIL and in non-CLIL is not significant. The statistical details can be found in Table 5.

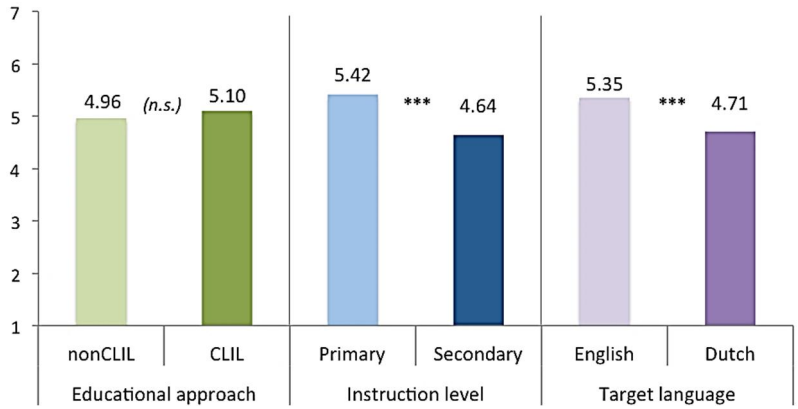

Figure 3 Comparisons of means between groups for enjoyment (*** $p < .001$)

Table 5 Univariate analysis of covariance for enjoyment

Source	Type III sum of squares	*df*	Mean Square	*F*	*p*	Partial eta squared
Corrected model	238.918*	12	19.910	21.280	0.000	0.277
Intercept	355.100	1	355.100	379.536	0.000	0.362
Gender	0.000	1	0.000	0.000	0.986	0.000
Socio-economic status	0.008	1	0.008	0.009	0.926	0.000
Non-verbal intelligence	0.040	1	0.040	0.043	0.836	0.000
Bilingualism	8.383	1	8.383	8.960	0.003	0.013
School failure	1.032	1	1.032	1.103	0.294	0.002
Level (primary/secondary)	46.164	1	46.164	49.341	0.000	0.069
Target language (English/Dutch)	62.049	1	62.049	66.318	0.000	0.090
Approach (non-CLIL/CLIL)	2.628	1	2.628	2.809	0.094	0.004
Level x target language	12.836	1	12.836	13.719	0.000	0.020
Level x approach	6.314	1	6.314	6.748	0.010	0.010
Target language x approach	2.188	1	2.188	2.338	0.127	0.003
Level x language x approach	0.030	1	0.030	0.032	0.858	0.000
Error	624.991	668	0.936			
Total	17546.316	681				
Corrected total	863.908	680				

Note. * $R^2 = .277$ (adjusted $R^2 = .264$)

Post hoc tests on the interaction between instruction level and target language (see Figure 4) indicate that pupils learning English in primary school experience significantly more enjoyment in the FL classroom than pupils learning Dutch in primary school and more than pupils learning either English or Dutch in secondary school. On the other hand, pupils learning Dutch in secondary school appear to report significantly less enjoyment than the three other groups, with a score just above the neutral point in the scale. The two groups in the middle, pupils learning Dutch in primary school and pupils learning English in secondary school, are the only groups that do not differ significantly from each other.

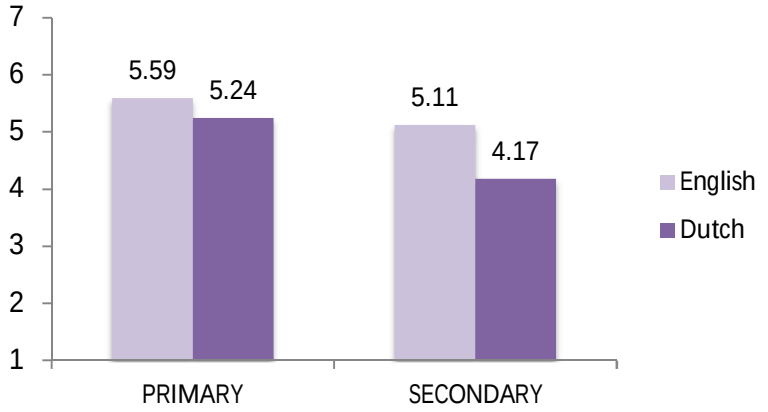

Figure 4 Effect of the interaction between instruction level and target language on enjoyment

For the interaction between instruction level and educational approach (see Figure 5), post hoc tests indicate that pupils in the non-CLIL track in secondary education experience significantly less enjoyment in the FL classroom than pupils in the CLIL-track in secondary school and less than pupils in primary school, whether in CLIL or non-CLIL. Moreover, pupils in primary education, both in CLIL and non-CLIL, appear to report significantly more enjoyment than pupils in secondary education, whether in CLIL or non-CLIL. Amongst the pupils in primary school, there is no significant difference in enjoyment between the CLIL and the non-CLIL track.

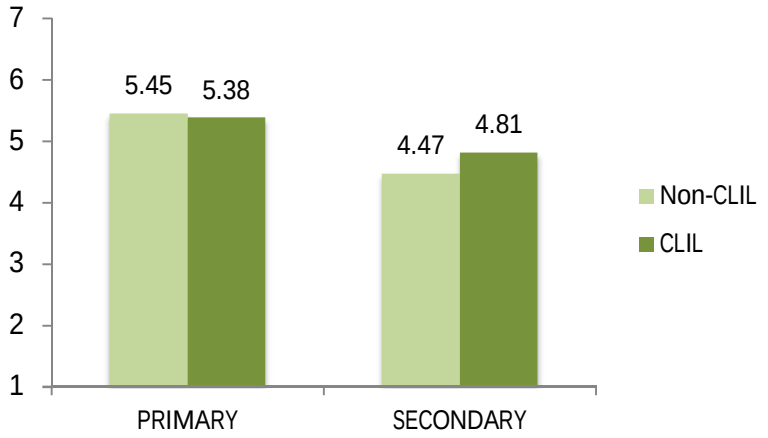

Figure 5 Effect of the interaction between instruction level and approach on enjoyment

5. Discussion

This study investigated positive and negative emotions in CLIL by examining how FL classroom anxiety and enjoyment vary across different settings. Our results revealed significant differences across groups for both emotional dimensions. In this section, we discuss and interpret the main effects of (1) educational approach (CLIL/non-CLIL), (2) target language (English/Dutch) and (3) instruction level (primary/secondary), all qualified by the significant interactions between instruction level and respectively (a) target language and (b) educational approach.

5.1. H1: More favorable emotions in CLIL compared to non-CLIL

The results confirmed the first hypothesis for anxiety, with pupils reporting significantly less anxiety in CLIL than in non-CLIL. However, for enjoyment, the differences were not statistically significant across the whole sample. A slight difference in favor of CLIL only appeared at secondary level, suggesting that the specific didactic approach might help to reduce the decrease in enjoyment from primary to secondary education. This is an interesting finding, as enjoyment had — to our knowledge — not been compared in CLIL and non-CLIL before. As for anxiety, our results are in line with those of Thompson and Sylvén (2015), who reported significantly less English class performance anxiety for pupils in CLIL compared to non-CLIL. However, as this difference occurred at the very onset of CLIL, the authors attributed the effect to voluntary selection into CLIL rather than to CLIL itself. In other words, pupils who opted for CLIL were already less anxious before the start of CLIL.

Considering this, the question remains whether the reduced anxiety we found in favor of CLIL pupils can be ascribed to the specific CLIL approach or rather to a selection effect. While there is no explicit selection for CLIL by the schools, the background differences we observed, that is, significantly higher SES, higher IQ and lower school failure in CLIL compared to non-CLIL, suggest a voluntary selection effect, with more favorable profiles in CLIL. Interestingly, our results also showed a significant effect of SES on anxiety, with pupils experiencing less anxiety when having a higher SES. Given that pupils tend to have a higher SES in CLIL, lower anxiety in CLIL is thus partially explained by higher SES. While this effect was controlled for in the analysis by including SES as a covariate, anxiety still appears to be significantly lower in CLIL than in non-CLIL, regardless of SES. Longitudinal studies would be needed to shed more light on this matter by unraveling "group progress, individual variation within groups and individual trajectories" (Meunier, 2015, p. 382).

5.2. H2: More favorable emotions in English compared to Dutch

The second hypothesis was confirmed by our results, indicating that pupils learning English experience significantly more enjoyment and less anxiety in the FL classroom in comparison to pupils learning Dutch. However, as indicated by the interaction with instruction level, this language difference in favor of English is only visible at secondary level for anxiety and is stronger at secondary level for enjoyment. Yet, the fact that both emotions (positive and negative) differ significantly according to the target language at secondary level is a valuable insight, especially considering the fact that most of the research focuses solely on English as a target language. Moreover, in the context of Belgium, this finding corroborates the existence of more favorable perceptions towards English than towards Dutch (Lochtman et al., 2005), even if secondary school pupils seem more affected by this than primary school pupils. Further research on emotions should therefore look into the role of target language perceptions.

Interestingly, while we found more positive emotions in English than in Dutch, the background differences according to target language revealed more favorable profiles for pupils learning Dutch, with higher SES, higher IQ and lower school failure compared to pupils learning English. Hence, more favorable profiles in terms of background do not necessarily lead to more favorable emotions in terms of more enjoyment and less anxiety in the FL classroom.

5.3. H3: More favorable emotions in primary education compared to secondary education

Results partially confirmed our third hypothesis as pupils reported more enjoyment but also more anxiety at primary level. In other words, pupils in primary school appear to experience more emotions overall (both positive and negative) rather than more favorable emotions, compared to pupils in secondary school. While we expected (and confirmed) the drop of enjoyment from primary to secondary education based on the differences in instruction organization between the two levels (Feldlaufer et al., 1988; Wigfield et al., 1998), the unexpected higher anxiety we found in primary school might be due to the relatively short experience of the pupils with learning a new language at school, in comparison to secondary school pupils. Furthermore, the interaction with target language revealed that differences between English and Dutch mainly appear at secondary level and not (so much) at primary level. The same is true for the interaction with educational approach, showing that enjoyment is more favorable for CLIL only at secondary level. These findings provide an interesting contribution to the field of emotions in language learning as few studies integrate primary education

in their design, while our results indicate that not all findings from secondary level can be generalized to primary level.

6. Conclusion

Taken together, the findings of the present study provide a more complex picture of classroom emotions in CLIL and non-CLIL than expected. Firstly, a stronger beneficial effect of CLIL was found for anxiety than for enjoyment, with the latter only appearing at secondary level. While the design of the study cannot rule out a selection bias for CLIL pupils based on unmeasured characteristics (e.g., motivation), the effects we found cannot entirely be explained by the more favorable background characteristics of CLIL pupils (higher SES, IQ and school retention). Secondly, target language appears to play a major role, with more favorable emotions in English than in Dutch, especially at secondary level. This benefit for English (much larger for enjoyment than for anxiety) cannot be explained by background characteristics either as those are more favorable for pupils learning Dutch. Thirdly, the interaction effects with instruction level revealed that the largest effects of educational approach and target language occur at secondary level. Besides, the effects of target language and instructional level are at least as large as the effect of educational approach. These results clearly invite researchers to conduct more studies on languages other than English and at other instructional levels than secondary school. Moreover, in the specific context of Belgium, future research should also investigate the role of target language perceptions. Finally, significant sources of difference are not the same for anxiety and enjoyment, and the strength of the effects also differs, highlighting the importance of considering both positive and negative emotions in the study of second language acquisition.

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APPENDIX A

Anxiety and enjoyment scales (French version used in the study)

Anxiety: 9 items

1. En classe, j'ai peur de faire des erreurs en anglais/néerlandais.
2. Je me sens plus tendu(e) et nerveux(se) aux cours en anglais/néerlandais qu'aux autres cours.
3. Cela m'angoisse quand je ne comprends pas ce que dit le professeur en anglais/néerlandais.
4. En classe, je panique quand je dois parler en anglais/néerlandais sans préparation.
5. Cela me tracasse quand je ne comprends pas ce que le professeur corrige en anglais/néerlandais.
6. L'idée que les professeurs corrigent toutes mes erreurs en anglais/néerlandais me stresse.
7. J'ai toujours l'impression que les autres élèves parlent mieux anglais/néerlandais que moi.
8. Je me sens très mal à l'aise de parler anglais/néerlandais devant les autres élèves de la classe.
9. J'ai peur que les autres élèves se moquent de moi quand je parle anglais/néerlandais.

Enjoyment: 5 items

« Lors de cours en anglais/néerlandais ... »

1. ... je m'ennuie. (*)
2. ... je m'amuse bien.
3. ... je me sens en confiance.
4. ... je suis fier/fière de ce que j'accomplis.
5. ... je me sens bien.

* Reverse scoring

APPENDIX B

Anxiety and enjoyment scales (English translation)

Anxiety: 9 items

1. In class, I am afraid to make mistakes in English/Dutch.
2. I feel more tense and nervous during classes in English/Dutch than during other classes.
3. I feel anxious when I don't understand what the teacher is saying in English/Dutch.
4. In class, I panic when I have to speak in English/Dutch without preparation.
5. It bothers me when I don't understand what the teacher is correcting in English/Dutch.
6. The idea that my teachers might correct every mistake I make in English/Dutch stresses me.
7. I always feel that the other students speak English/Dutch better than I do.
8. I feel very self-conscious about speaking English/Dutch in front of the other students.
9. I am afraid that the other students will laugh at me when I speak English/Dutch.

Enjoyment: 5 items

« During classes in English/Dutch ... »

1. ... I get bored. (*)
2. ... I enjoy myself.
3. ... I feel confident.
4. ... I feel proud of what I achieve.
5. ... I feel good.

* Reverse scoring